

## REMARKS

Claims 1, 2, 4-20, and 22 are pending. The Applicant is herein amending claims 1, 9, 17, and 22. Claims 3 and 21 are herein cancelled.

The Examiner's indication of allowability of claims 3, 9, 17, and 18 is noted with appreciation.

The Examiner objected to the drawings, stating the figures do not show the claimed features of an emitter scattering grating and an emitter reflector as recited in claims 3 and 9, respectively.

With regard to the emitter scattering grating, the Applicant wishes to refer the Examiner to Figure 7 and the paragraph beginning at line 17 on page 9 of the originally filed application, which states: "In another construction, each emitter 14f and 16f and each detector 18f and 20f, Fig. 7, may be provided with a diffraction grating 110, 112, respectively, as shown with respect to emitter and detector 14f and 18f, respectively. These gratings deflect the radiation so that it is directed laterally 114, 116 as indicated with respect to emitter 14f and is laterally received and redirected into detector 18f as indicated at 118 and 120." Thus, Figure 7 shows an emitter scattering grating as recited in the Applicant's claim 3.

With regard to the emitter reflector, the Applicant wishes to refer the Examiner to Figure 2 and the paragraph beginning at line 3 on page 7 of the originally filed application, which states: "In another construction, Fig. 2, each emitter 14a, 16a, includes a mirror 32 (where the emitters are VCSELs), as shown with respect to emitter 14a, ... ." The mirrors 32 included in the emitters 14a and 16a are reflectors. Thus, Figure 2 shows an emitter reflector as recited in the Applicant's claim 9.

As the Applicant has identified each of the claimed features in the originally filed figures, the Applicant respectfully requests that the Examiner reconsider and withdraw this objection. The Applicant is also herein submitting formalized drawings for the Examiner's review, in preparation for allowance.

Claims 1, 6, 10-12, 15, 16, 21, and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hirota (U.S. Patent No. 5,822,475). Claims 4 and 5 were rejected under 35

U.S.C. § 103(a) as being unpatentable over Hirota in further view of Heidrich (U.S. Patent No. 6,061,481). Claim 20 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Hirota in further view of Matthews (U.S. Patent No. 6,228,644). Claims 2, 7, 8, 13, and 14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hirota in further view of Frankel (U.S. Patent No. 6,096,496).

Without conceding as to the merits of these rejections, the Applicant has amended the claims as suggested by the Examiner in order to move this case to allowance. In particular, the Applicant has amended claim 1 to include the limitations of claim 3, thereby effectively rewriting claim 3 in independent form. Also, claims 9 and 17 have been amended to independent form. The Examiner indicated that such amendments would make the claims allowable. In addition, claim 21 has been cancelled, and claim 22 now depends from allowable claim 17. As such, the Applicant respectfully requests the Examiner to withdraw these rejections.

The Applicant wishes to note that the cited references, whether alone or in combination, are deficient in a number of ways in disclosing or suggesting each and every limitation of the claimed invention. For example, and as correctly indicated by the Examiner, Hirota fails to disclose or suggest a reflective medium for containing the scattering radiation used in conjunction with a scattering medium, as recited in the Applicant's claims 17, 18, and 22. Rather, Hirota merely discloses an optical diffusion plate at the opposite side of the optical diffusion path. (col. 9, lines 3-8). Further note that this diffusion plate is used as an alternative to the optical diffusers 21a. (col. 8, line 67 to col. 9, line 4).

Likewise, Hirota fails to disclose or suggest a shared waveguide that is disposed part on one substrate and part on another substrate, thereby allowing communication between circuitry on the substrates, as recited in claim 22. An example embodiment having a shared waveguide that is disposed part on one substrate and part on another substrate is shown in the Applicant's Figure 4. The Examiner cites Hirota's figure 6 as disclosing this claimed limitation. However, the Applicant respectfully submits that Hirota's figure 6 merely discloses the transmission of signals from one circuit board 40 to another circuit board 40, using the "same optical transmission layer 21." (col. 7, lines 59-64). Thus, Hirota's optical transmission layer 21 is on the same substrate, not two or more substrates. Indeed, if Hirota's optical transmission layer 21 were broken into multiple pieces, the Applicant submits that optical transmission between the

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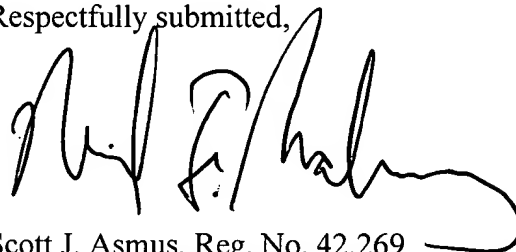
Amdt. Dated November 4, 2004

Reply to Office Action of September 17, 2004

pieces would be impeded, given Hirota's design.

In any case, the Applicant believes the above amendments and remarks to be fully responsive, thereby placing this application in condition for allowance. Favorable action is solicited. The Examiner is kindly invited to contact the undersigned attorney by telephone, facsimile, or email for quickest resolution, if there are any remaining issues.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Neil F. Maloney", with a long horizontal flourish extending to the right.

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